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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,161	03/01/2002	Andrew D. Schmitz	SD-209A	8049

7590 02/07/2005

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EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,161

Applicant(s)

SCHMITZ, ANDREW D.

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4 and 6-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al., "hereinafter Takada", (US Pat. 6,103,916) in view of Jin et al., "hereinafter Jin", (US Pat. 5,063,195).

Regarding claims 1 and 6-8, Takada discloses a silver catalyst which formed by depositing silver on a carrier having alumina as a main component thereof and used for the production of ethylene oxide (see col. 7, claim 1). The carrier is subjected to washing with water at 900C for 30 minutes. The carrier washed was dried thoroughly at 1200C, then impregnated with a complex solution of silver salt, subsequent heating, further dried at 120 C for 1 hours, and heat-treated in a stream of air at 280 C for 48 hours. Thereafter, the resultant composite was heat-treated in an atmosphere of nitrogen at 530 C

for 3 hours to obtain a silver catalyst for the production of ethylene oxide. (see col. 5, Example 1, ln 50-54).

Takada does not disclose calcining the carrier at temperatures above 200C.

It would have been prima facie obvious to one of ordinary skill in the art to have calcined the carrier at the calcination temperature as suggested by Jin, which is from 1450 C to 1550 C for about 2 to 6 hours, so that all of the alumina converted to alpha-alumina (see Jin at col. 3, lines 1-14) because it is known to do so.

Regarding claims 14 & 15, Takada discloses the claimed catalyst carrier, a silver catalyst, and a process of preparing a catalyst including the improvement step as recited in claim 1, thus anticipates the claims.

Regarding claim 9, the claim is met by the reference since Takada discloses subjecting the carrier to a heat treating temperature of 900C (see Takada at col. 5, Example 1, ln 50-54). The disclosed temperature falls within the claimed temperature range.

Regarding claim 10, Takada discloses washing the carrier with water, preferably pure water (see Takada at col. 3, ln 60-63), thus meets the claim.

Regarding claims 2-4, while Takada does not disclose multiple washing and calcining steps as being claimed, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have done the same in the process of Takada in order to remove impurities in the carrier material and ensure complete conversion of alumina hydrate (or compound) into pure alumina (or α -alumina) and to obtain a highly stable catalyst because it is conventional to so in the catalyst art. Calcination of a carrier is known and has been done as evidenced by Jin (see Jin at col. 3, lines 1-14).

Regarding claim 11, Takada does not disclose washing the carrier with aqueous solutions ammonium fluoride.

It would have been prima facie obvious to one of ordinary skill in the art to have washed the carrier with such known solution to obtain an improved carrier material because Jin fairly suggests that ammonium fluoride make alumina easy to transform into crystals and said alumina is converted completely into α -alumina crystals during the calcination, which benefits the elimination of unnecessary micropores (see Jin at col. 2, lines 65-68 & see also col. 1, lines 52-55). Jin discloses using the ammonium fluoride in the amount of from 0.5 to 5.0 percent by weight (see Jin at col. 3, ln 1-4).

3. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al., "hereinafter Takada", (US Pat. 6,103,916), as applied to claim 1, and further in view of Mross et al., "hereinafter Mross", (US Pat. 4,530,910).

Takada discloses a silver catalyst and a process of preparing catalyst thereof as described above, except for the following differences.

Takada does not disclose washing the carrier with aqueous solutions of mineral acids or salts of the metals being claimed. It would have been prima facie obvious to one of ordinary skill in the art to have washed the carrier of Takada with aqueous solutions of carboxylic acids and alkaline earth metal salts to result in a more active carrier and catalyst because it is known in Mross to do so for the same carrier (see Mross at col. 2, ln 7-67 & see also col. 1, lines 42-47).

Response to Arguments

4. Applicant's arguments filed 11/22/04 have been fully considered but they are not persuasive.

It is argued that it is of the essence of the present invention that before deposition of silver... and then again washed. This is not persuasive because Takada discloses "repeating" the operation of the washing method (see column 3, lines 64-67), which would be at least two washings as claimed.

Takada also discloses heat treating at 530 degrees Celsius (see Example 1). The disclosed heat treatment also is in a nitrogen atmosphere, upon which Applicant's claim to an oxygen free calcination reads. All of which would obviously, to one of ordinary skill, suggest the claimed two carrier washings and calcination.

It is argued that as to Jin, this reference also fails.. essence of the instant invention. This is not persuasive for the reasons above.

It is argued that the Examiner concedes that the references do not disclose.. conventional to do so in the catalyst art. This is not persuasive because the basis for the Examiner's rejection is not a mere assumption that the claims are conventional, as Applicant appears to suggest (see above).

It is argued that Mross et al. does not remedy the fatal defects of the primary reference.. suggesting such a sequence. This is not persuasive because for the reasons above regarding the primary reference and because Mross is not relied upon for Applicant's alleged defects. Takada discloses "repeating" the operation of the washing method (see column 3, lines 64-67), which would be at least two washings as claimed, which would obviously, to one of ordinary skill, at least suggest the claimed second washing after Takada's disclosed calcination.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edward M. Johnson
Examiner
Art Unit 1754

EMJ